REMARKS

Claims 1-7 are currently pending. Claim 1 has been amended. Claims 4, 5, 6 and 7 have been newly added. Support for the changes to claim 1 and for the new claims may be found in the specification as originally filed, for example:

Claim 1 Paragraphs [0030] and [0031];

Claim 4 Paragraph [0029];

Claim 5 Paragraphs [0032], [0033] and [0042];

Claim 6 Paragraphs [0021], [0022] and [0036]; and

Claim 7 Paragraphs [0032].

I. The Rejection under 35 U.S.C. 112

Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite.

In claim 1, the Examiner states that the term "in a solid" does not clearly define the claimed invention in a concise manner. The Examiner requests that said term be deleted.

In claim 3, the Examiner recommends amending to the language "wherein 99% by volume of the ceria particles have a size of less than 1 μm" for clarity.

Applicants' claims have been amended for clarity. Applicants respectfully submit that the present claims are clear and definite as written and that they particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants request that the rejection under 35 U.S.C. §112, second paragraph, be reconsidered and withdrawn.

II. The Art Rejections

Claims 1-3 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pasqualoni et al. (671).

Claims 1-3 are rejected under 35 U.S.C. 102(a) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Uchino et al. (206).

Claims 1-2 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kido et al. (836).

Claims 1-2 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yoshida et al. (118).

Claim3 is rejected under 35 U.S.C. 103(a) as allegedly being obvious over Kido et al. (836) or Yoshida et al. (118).

Applicants respectfully submit that the present invention is not anticipated by or obvious over the disclosures of Pasqualoni et al. (671), Uchino et al. (206), Kido et al. (836), Yoshida et al. (118), Kido et al. (836) or Yoshida et al. (118) and request that the Examiner reconsider and withdraw these rejections in view of the following remarks.

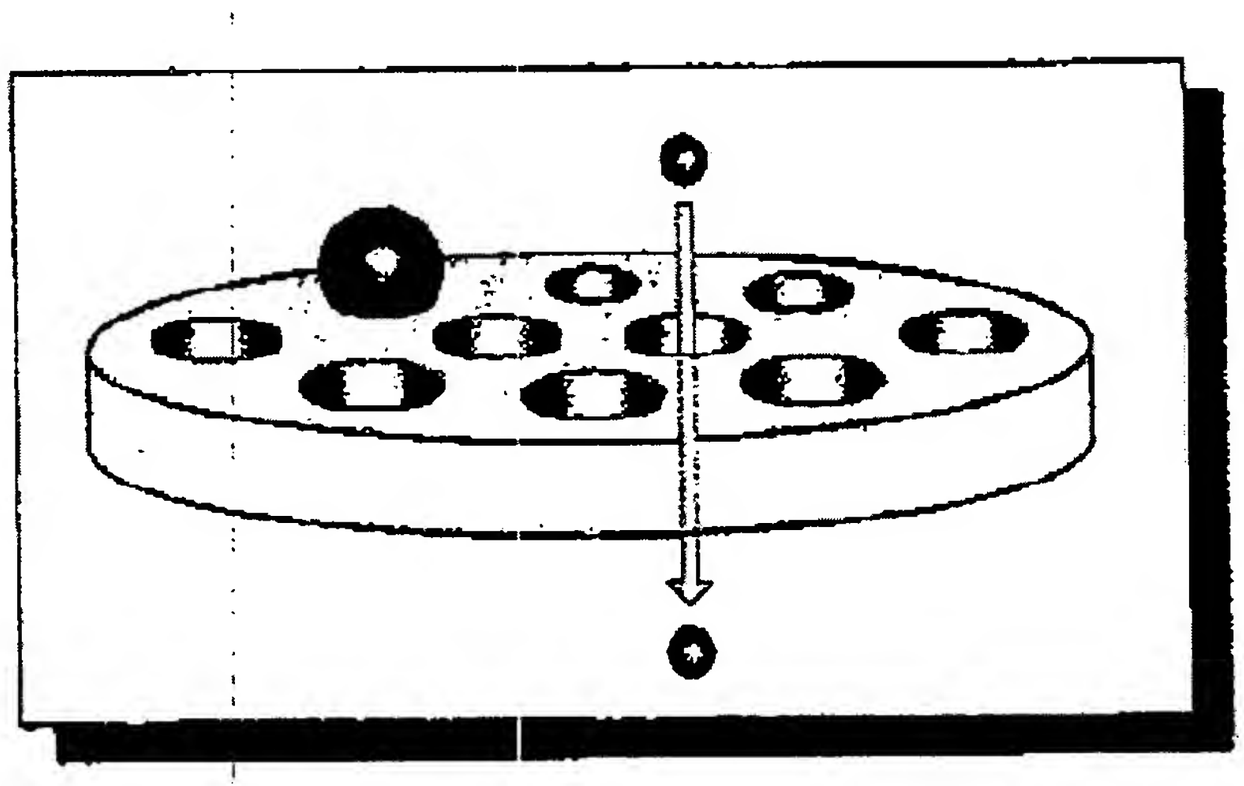
In general, the filters used in filtering are classified roughly into two kinds in structure, Membrane filter and Depth filter (filter for mass production in Applicants' specification, paragraph [0032]). Membrane filters capture particles at the surface thereof when the particles have larger size than pore size of the filter. Membrane filters are used mainly when precision is demanded. But a large amount of captured particles lead to blocking of the pores, which makes the filtering hard and shortens the life of the filter. Even if the size of the captured particles is

less than the size of pores, particles in succession mutually may also be captured.

On the other hand, Depth filters comprise plural or single layer(s) of medium with enough depth, and capture and remove particles at the surface and the inside of the matrix of the medium. As the fibers forming the matrix are not fixed, a particle having a larger size than the pores of the filter might pass the filter. A feature of a Depth filter is long life but with less precision.

A feature of the present application is to decrease the number of particles contained in the polishing slurry, which are captured on a film type filter for analysis having pores diameter of 3 μm as show in the Figure below.

Figure



Thus, the amount of particles having a diameter of at least 3 μm actually existing in the polishing slurry of the present invention is low. This is done by a combination of following techniques: the filtration for plural times with specific structural filter, the filtration with the film type filter, and the classification. Thus, the amount of the particles having a diameter of at least

3 μm actually existing in the polishing slurry of the present invention is small.

The measuring methods of particle size of the Cited references are all different from that of the present application. Even though at a superficial glance, the particle sizes of the Cited art looks like they have no coarse particles, coarse particles are actually not necessarily sufficiently excluded in the slurries of the Cited references (Pasqualoni et al. (671), Uchino et al. (206), Kido et al. (836), Yoshida et al. (118), Kido et al. (836) and Yoshida et al. (118)).

Further to the rejection based on Pasqualoni et al ('671), Pasqualoni et al ('671) discloses a slurry composition having less than 15000 particles diameter of more than 0.5 μm in 30 μl. However, Pasqualoni et al ('671) does not contain any description about maximum diameter of particles, and the content of coarse particles is provided by number of coarse particles in the specific amount of the slurry. Therefore, there is neither a description nor a suggestion about content of the particles in a whole solid (all the solids in the polishing slurry) in the polishing slurry as the present invention.

Furthermore, Pasqualoni et al ('671) defines the particle size by use of Accusizer and there is neither a description nor a suggestion about whether actual content of the particles having a diameter of at least 3 μm is not more than 500 ppm.

As discussed in paragraphs [0005] and [0006] of present application, though the inventors had known that use of a filter makes the scratches decrease in the case of the silica polishing slurry, the relationship between the coarse particles of cerium oxide and the scratches was not understood.

The present inventors found that, in case of serium oxide polishing slurry, scratches are decreased by specifying the actual content of the cerium oxide particles having a diameter of at least 3 μm measured by a filter for analysis.

Pasqualoni et al ('671) describes only the polishing slurry using silica and contains no suggestion how to decrease scratches while maintaining polishing speed in case of using cerium oxide polishing slurry.

Further to the rejections based on Uchino et al. (206), Kido et al. (836), Yoshida et al. (118), Kido et al. (836) or Yoshida et al. (118), the particle size of the three cited references are measured by a laser diffraction type particle size distribution meter. But said distribution meter cannot detect small contents of particles (on the order of about 0.X % (X x 1000 ppm)) because diffraction of such few particles is so weak that it is not easy for the measured particle size and its distribution to be reflected. The Examples and Comparative Examples also show that the measurement by the particle size distribution meter did not detect particles having a diameter of at least 3 μm, but the particles having a diameter of at least 3 μm were detected in Example or not detected in Comparative Example by filtering with a film type filter for analysis having holes diameter of 3 μm.

Therefore, it is uncertain in the polishing slurries of the cited references whether "the content of the cerium oxide particles having a diameter of at least 3 μm captured by filtering with a filter for analysis having holes diameter of 3 μm is not more than 500 ppm at a weight ratio occupied in a whole solid in the polishing slurry". Furthermore, because the filtration in the Example is only once through a depth filter, there is a possibility that more quantity of the coarse

particle may be contained in the filtered slurry.

On the other hand, in the present invention the slurry has the particles having a diameter of at least 3 μm in the claimed range, as determined by the method set forth in the claim, and unexpectedly has a more excellent detection ability of coarse particles as shown in the Examples, than the laser diffraction type particle size distribution meter.

When the filter is selected according to the particle size measured by a particle size distribution meter, removal of the coarse particles in the slurry is actually not enough. And when the above slurry is filtered again with the filter for analysis, the coarse particles will be measured in 1000 ppm level such as the Comparative examples of the present application.

The present application can decrease the amount of coarse particles to not more than 500 ppm in the slurry by combination of appropriate kind of filter and appropriate times of filtration. The feature can detect to be visible the value that could not detect in prior art, and unexpectedly achieves a quality slurry that was not able to be achieve before. There is no description or suggestion in the cited references about such features and achievements.

For the above reasons, it is respectfully submitted that the subject matter of claims 1-7 is neither taught by nor made obvious from the disclosures of Pasqualoni et al. (671), Uchino et al. (206), Kido et al. (836), Yoshida et al. (118), Kido et al. (836) or Yoshida et al. (118) and it is requested that the rejections under 35 U.S.C. §§102 and 103 be reconsidered and withdrawn.

III. Conclusion

In view of the above, Applicants respectfully submit that their claimed invention is allowable and ask that the rejection under 35 U.S.C. §112 and the rejections under 35 U.S.C. §§102 and 103 be reconsidered and withdrawn. Applicants respectfully submit that this case is in condition for allowance and allowance is respectfully solicited.

If any points remain at issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the local exchange number listed below.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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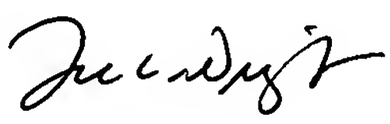

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